



Summer temperature-related mortality: Effect modification by previous winter mortality

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Abstract:

Background: Several studies have described seasonal patterns of mortality, with rates higher in winter and lower in summer. Few researchers, however, have analyzed how the mortality rate in winter may influence the temperature-mortality association in the following summer. In the present paper, we addressed the question of whether the association between summer temperature and mortality among the elderly is modified by the previous winter mortality rate. **Methods:** We selected all deaths in Rome during 1987-2005 among persons 65 years old or older. We collected data on daily mean temperature and humidity. We estimated the effect of summer apparent temperature on mortality by using a time-series approach, and tested the effect modification based on the mortality rate during the preceding winter. **Results:** The effect of summer apparent temperature on mortality was stronger in years characterized by low mortality in the previous winter (relative risk for days at 30°C vs. days at 20°C Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 1.73 [95% confidence interval Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 1.50-2.01]), as contrasted with years with medium (1.32 [1.25-1.41]) or high winter mortality (1.34 [1.17-1.55]). The percentages of attributable risks for summer heat were 28%, 18%, and 18% for years characterized by low, medium, or high winter mortality rates respectively. **Conclusions:** Low-mortality winters may inflate the pool of the elderly susceptible population at risk for dying from high temperature the following summer.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

Climate Change and Human Health Literature Portal



resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country


Other European Country : Italy

Health Impact: 

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

Population of Concern: A focus of content

Population of Concern: 

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type: 

format or standard characteristic of resource

Research Article

Timescale: 

time period studied

Time Scale Unspecified